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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,882	02/19/2004	Karl Schreiber	2560-0421	9055
7590 07/14/2005 Timothy J. Klima, Esq. Harbin King & Klima 500 Ninth Street SE Washington, DC 20003			EXAMINER HANAN, DEVIN J	
			ART UNIT 3745	PAPER NUMBER

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/780,882	Applicant(s) SCHREIBER, KARL	
	Examiner Devin Hanan	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 10, 11 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/28/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The leading edge former is stated to have "a small tip radius". The description is an unbased comparison because "small" is a relative term.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-9, 12, as far as it is definite, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hertel et al. (U.S. Patent 5,486,096) in view of Wright et al. (U.S. Patent 2,734,586).

Hertel et al. discloses an airfoil having a blade core of a fiber compound material (12) and a metallic enclosing structure (22)

wherein the enclosing structure (in this invention the enclosing structure is a toughened epoxy film; col. 4, lines 6-9) includes a blank on a suction side of the airfoil and a blank on a pressure side (20) of the airfoil which are connected in an area of a

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leading edge of the airfoil to a leading-edge former constructed of a solid metal (22, col. 1 lines 46-50).

Hertel does not disclose the metallic enclosing structure is of a multi-part design.

However, Wright teaches of a metallic enclosing structure of a multipart design in order to make the exterior of the blade to be impervious (col. 1 lines 60-61) and allow for a rigid welding of the blanks to the leading edge former (col. 2 line 24-32).

Regarding claim 2, Hertel et al. discloses a leading-edge former has an asymmetrical cross-section (22) to attach end faces of the blanks to the former where the former and the blanks are offset relative to each other, with a pressure-side attachment being positioned farther away from the leading edge than a suction-side attachment.

Hertel et al. does not disclose that those attachments are welds.

However, Wright et al. teaches of using welds for the purpose of rigidly attaching the blanks to the former (col. 2 lines 24-32).

Regarding claim 3, Hertel et al. discloses outer surfaces of the blanks and of the leading-edge former are flush with each other (figure 2, molding process left a flush exterior, but irregular thicknesses where the blanks meet the former, col. 4 lines 14-21).

Regarding claim 4, Hertel et al. does not disclose the leading-edge former includes recesses for locating ends of the blanks.

However, Wright et al. teaches of modifying the former to include recesses to help the blanks attach flush with the former (figure 4).

Regarding claim 5, Hertel et al. discloses a asymmetrical leading edge-former is longer on the pressure side than on the suction side and includes a fillet facing towards the blade core into which the fiber compound material protrudes (figure 2, material 12 is encased).

Regarding claims 7 ad 8, Hertel et al. does not disclose a leading-edge former includes an attaching rib, in the form of a wedge, facing towards the blade core and which protrudes into the fiber compound material. The related drawing, figure 4, is unclear as to how the wedge was shown. The elements 1,4,5,11 and 12 appear to be a two dimensional cross section, but element 3 appears to show depth as if it is drawn in an isometric fashion, perhaps to show additional details. Correction is requested.

However, Wright teaches of an attaching rib in the form of a wedge (44) towards the blade core to allow attachment to provide a web to allow for bonding (col. 1-2 lines 67-1).

Regarding claim 9, Hertel et al. discloses a the thicknesses of at least one of the blanks varies over the width of the blank from the leading edge to a trailing edge, in dependence of the load applied to the blank

Regarding claim 12, Hertel et al. discloses the leading edge former includes an aerodynamically favorable shape with a small tip radius (fig 2).

Regarding claim 13, Hertel et al. discloses the leading edge former are constructed from austenitic steels, but does not disclose the blanks are made of austenitic steels.

However, Wright et al. disclose the blanks are made of steel to make them impervious (col. 1 lines 59-67).

Since Hertel et al. and Wright et al. are from the same field of endeavor, airfoil blades with low-density fiber cores and higher density exteriors with solid leading edges, Wright et al. would have been recognized in the pertinent prior art of Hertel et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a multi part metallic structure including metal blanks welded to solid metal leading edges wedged into the fiber core, also having recessed grooves for accepting the metal blanks, as taught by Wright et al. in the airfoil blade of Hertel et al. for the purpose of making an impervious exterior structure with the leading edge bonded with the steel blanks by flush rigid welds and to the fiber core by using the web (multi part design col. 1 lines 60-61, welds col. 2 lines 24-32, steel blanks col. 1 lines 59-67, web col. 1-2 lines 67-1).

Allowable Subject Matter

Claims 6, 10-11 and 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

The patents to Beyer (U.S. Patent 6,454,533) and Kock (3,466,725) were cited for their teachings of multi-piece metal blades including formers and blanks that are welded together.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Devin Hanan
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2/16/05